Clinical and Community Studies

Psychiatric assessment of patients with "20th-century disease" ("total allergy syndrome")

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"Twentieth-century disease", or "total allergy syndrome", is a condition attributed to hypersensitivity to the environment that may sometimes be seen as so serious that the patient is incapable of living in the modern world. Although the popular media frequently carry stories about it, there is little scientific literature. It is diagnosed by clinical ecologists, who maintain, among other theories, that susceptible individuals experience an overload in assaults by artificial materials in the environment. The patients usually have multiple ill defined symptoms for which no organic cause can be found, but they vigorously resist psychiatric referral, as they attribute their symptoms to allergy. A group of 18 patients who were purportedly suffering from 20th-century disease were referred to a university psychiatric consultation liaison service. They virtually all had a long history of visits to physicians, and their symptoms were characteristic of several well known psychiatric disorders. The case histories and management of three of them are presented. Although this group of patients may have been atypical in that they had more severe psychologic symptoms, the experience indicates that a psychiatric diagnosis ought to be considered. The symptoms of 20th-century disease have much in common with other conditions known to physicians for centuries.

Le soi-disant "maladie du 20e siècle" (ou "syndrome allergique total") représenterait un état d'hypersensibilité à l'environnement qui se percevrait parfois comme étant si grave qu'elle rend impossible une vie normale dans le monde actuel. Si on en fait beaucoup de cas dans les journaux et revues populaires, la presse scientifique en dit peu. Ce diagnostic est volontiers posé par des "écologistes cliniciens" dont l'une des théories est que l'individu atteint souffre de la présence dans son milieu d'un grand nombre de substances artificielles. Le malade présente un certain nombre de symptômes assez vagues qu'on ne peut rattacher à une cause organique, mais comme il les attribue à l'allergie il refuse carrément de voir un psychiatre. Il s'agit ici de 18 malades supposément atteints de la maladie du 20e siècle qui ont été adressés à une consultation psychiatrique en milieu universitaire. Ils ont, pour la plupart, de longs antécédents de visites médicales pour des symptômes typiques de plusieurs troubles psychiques bien connus. Présentation de trois de ces malades et du traitement qui leur a été offert. On dira que les 18 malades ne sont pas typiques, puisqu'ils avaient des symptômes psychiques plus sérieux. Malgré tout, il y a lieu de penser à un trouble psychique devant la maladie du 20e siècle: ses symptômes ressemblent fort à ceux de certains états pathologiques connus aux médecins depuis des siècles.

A newly described condition in which the patient claims to be hypersensitive to his or her environment, particularly synthetic items, is known as "20th-century disease", or "total allergy syndrome". Mild cases are characterized by a variety of psychologic and physical symptoms, such as depression, fatigue, irritability, poor concentration, migraine, and bowel and respiratory problems. In severe cases the patient feels incapable of living in the modern world, perceiving that he or she is having allergic and life-threatening reactions to many substances, including clothing, furniture, construction materials, food, water and even the air. The reactions are as varied as the causes.

Although the lay press frequently carries arti-

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cles about the plight of patients suffering from 20th-century disease, and although the Ontario Ministry of Health has an ad hoc committee on hypersensitivities to the environment, there is little scientific literature about the subject. The patients usually attend both family physicians and specialists, attributing their symptoms to allergies that are not corroborated by conventional testing. Many in the medical profession are sceptical about the existence of the disease and are frustrated and uncertain about how to manage the patients. At present many of the patients travel to the United States, where ecologic clinics and hospitals, using costly and unorthodox techniques, have sprung up. Clinical ecologists maintain that the environment has been overloaded with chemicals, so that some people are becoming allergic to the world. However, scientific support for this theory is lacking.

Many of the symptoms of 20th-century disease are characteristic of psychiatric disorders, but the patients resist psychiatric referral or treatment. Nevertheless, a group of patients purportedly suffering from 20th-century disease was seen for psychiatric consultation, and all of them were found to be suffering from a recognizable psychiatric disorder. We illustrate, with brief case summaries, the presentation and management of three of the patients.

The patients

Eighteen patients who believed themselves to be suffering from 20th-century disease were referred by physicians or lawyers to the service, which is part of a university teaching hospital. All agreed to be interviewed by a psychiatrist, although 10 did so reluctantly and 16 refused psychologic testing. The information obtained from the interviews was tabulated in an attempt to identify common features (Table I).

The patients ranged in age from 23 to 61 years, with a mean age of 38. Fifteen of the 18 were well educated women from upper and middle social classes. They reported having had the symptoms from 3 to 60 months, the mean duration being 24 months, prior to psychiatric consultation. During the year before referral they had all frequented physicians' offices, the number of reported visits varying from 3 to 250 (mean 35, median 20). The substances felt by the patients to have precipitated the condition included insecticides, fumes, urea formaldehyde foam insulation, floor cleaner, air pollution, food preservatives or additives, prescription drugs, *Candida albicans* and influenza virus. At follow-up two patients (nos. 3 and 6) had changed their minds about the precipitating substance. After reading a newspaper article about generalized *C. albicans* infection both now attributed their symptoms to candidiasis. Only 2 patients had a documented history of allergies or atopy, but 12 had previously consulted psychiatrists.

Clinically, 7 of the patients exhibited somatoform disorders, 10 suffered from a psychosis or an affective or anxiety disorder, and 1 had a personality disorder (Table II).[1]

Case summaries

Case 1

A 42-year-old single woman (patient 5, Table I) was referred to our service by an allergist. She had been complaining of shortness of breath,

Table I—Characteristics of 18 patients purportedly suffering from 20th-century disease

Patient no.	Sex	Age at onset (yr)	Duration of symptoms (mo)	History of atopy	No. of visits to physician in past year	Perceived precipitator of the disease
1	M	23	4	Yes	11	Insecticide
2	F	61	9	No	23	Fumes in shopping mall
3	F	35	3	No	3	Fumes in washroom
4	F	37	11	No	27	Urea formaldehyde foam insulation
5	F	42	7	No	15	Floor cleaner
6	F	38	13	No	29	Subway fumes
7	F	38	36	No	35	City air
8	F	42	20	No	25	Food preservatives
9	M	45	24	No	31	Urea formaldehyde foam insulation
10	F	36	5	No	17	Food additives
11	F	31	60	No	250	Amitriptyline
12	M	37	36	No	15	Industrial fumes
13	F	55	36	No	5	Niacin
14	F	38	29	No	20	Amoxicillin
15	F	27	36	No	8	*Candida albicans*
16	F	38	48	No	90	*C. albicans*
17	F	26	24	Yes	19	Furosemide
18	F	43	23	No	10	Influenza virus

palpitations, coughing, headaches, hoarseness and mutism. She also reported an unsteady gait, fatigue, muscle aches and twitchings, tingling fingers, feelings of faintness and a flu-like illness without fever. She said that the symptoms began after she had been exposed to the fumes from floor cleaning in the building where she worked. She had consulted several other physicians, who had been unable to diagnose the condition. Then she had consulted a clinical ecologist, who diagnosed her problem as being 20th-century disease. She had travelled to an ecologic clinic in the United States, and the therapist there had recommended a special "rotary diet" (in which a limited number of "safe" foods are eaten in rotation), had prescribed "neutralizing solutions" and had advised her to stay in an "environmentally safe haven", which she was to construct in her home. She reported that she had been unable to work since her exposure to the fumes 7 months previously and that she seldom left her house, and never without a companion. She travelled with an oxygen tank and mask as well as a vial of neutralizing solutions for administration of drops under the tongue if she had "a spell". She had few social contacts other than telephone communication with other sufferers of 20th-century disease who constituted an informal support group.

She related a history of phobic anxiety related to subways, small spaces, closed windows and dull days. Throughout her adult life she had averaged 10 to 15 visits yearly to her general practitioner, with a variety of complaints for which no physical cause was ascertained. She had no history of atopy. She had always restricted her social life, interacting mainly with workmates. She had lived alone since becoming an adult and had taught public school before becoming ill. There was no family history of psychiatric disorder or allergy, but she described her parents and three siblings as nervous.

She was thin and anxious-looking, had cold, sweaty hands and was preoccupied with physical symptoms. She had difficulty sitting quietly in the chair and, while reiterating her symptoms, began to hyperventilate, complaining of faintness and tingling in her fingers. She administered oxygen to herself during the interview and within 30 seconds said she felt better. There was no evidence of depression or psychosis: she was correctly oriented, and her perception was clear. There was no evidence of thought disorder. Her judgement and insight were fair.

The diagnosis was "anxiety panic disorder with hyperventilation". She began a regimen of alprazolam, 2 mg twice a day, and behaviour therapy and, despite her scepticism, improved during the next 6 weeks. The hyperventilation spells gradually disappeared. She began to eat a normal diet, and although she continued to lead a fairly isolated existence she had begun to socialize a little when she prematurely discontinued treatment.

Table II—Diagnoses made by psychiatrist after clinical assessment of 18 patients

Major group of disorder[1] and specific diagnosis	No. of patients	
Schizophrenic disorders:	3	
Schizophrenia		1
Atypical psychosis		2
Affective disorders:	3	
Major depression		1
Dysthymia		2
Anxiety disorders:	4	
Panic disorder		2
Generalized anxiety		2
Somatoform disorders:	7	
Somatization		5
Conversion		1
Hypochondriasis		1
Personality disorders:	1	
Antisocial and malingering		1

Case 2

A 23-year-old man who had dropped out of university (patient 1, Table I) was referred to us by his family physician. A year earlier he had been exposed to insecticide in his family home and for 3 days had experienced chills, periorbital edema and urticaria. For the next 3 weeks he had felt tired and nervous, only to realize suddenly (20 days after exposure) that a neurotoxin had been in the bug spray and that someone had been trying to kill him. He had become seclusive and was anxious about eating in case the food had been poisoned, so he restricted his diet. Three months before psychiatric consultation he began seeing a clinical ecologist, who diagnosed 20th-century disease. The clinical ecologist prescribed neutralizing drops, told him to buy a special "ecologizer" for the car to purify the air and suggested further restrictions in his diet to eliminate probable food toxins.

He was thin, pale and agitated and had paranoid delusions. He reported that the Mafia were trying to kill him by spraying toxins from airplanes. His thoughts were disordered, and his judgement and insight were poor, but he was correctly oriented. A diagnosis of schizophrenia was made, and he was treated with haloperidol, 10 mg three times a day. Within 3 months he was eating a normal diet and no longer had delusions. He began to think about returning to his university courses the following autumn and no longer believed that he was suffering from 20th-century disease.

Case 3

A 41-year-old married woman (patient 7, Table I) with two teenage children was referred by a neurologist for psychiatric consultation. The patient stated that at age 38 she had developed 20th-century disease after breathing polluted city

air. She described feelings of dizziness and faintness, saying she had insomnia, aching bones and back, chronic vaginal itching, premenstrual tension, heavy menstruation and cystic mastitis. She also complained of weakness, tiredness, bloating, disorientation, muscle twitching, an inability to talk or move at times, recurrent upper respiratory tract infections, depression, anxiety and marital dysharmony.

She had consulted a number of general practitioners and internists and then a clinical ecologist, who diagnosed 20th-century disease. She had gone to an American ecologic clinic for further investigations and treatment. About a year before the psychiatric assessment she had moved from the city to the country, isolating herself in an "ecologically safe oasis", where she ate "organic" vegetables, drank triply distilled water and followed a rotary diet. She did not allow synthetic materials, cigarette smoking, or the use of sprays, shampoos or perfumes in her home, and she had her own oxygen line into her room. The few people who were allowed to visit had to wear clothing made from natural fibres that had been washed in Ivory Snow soap and had never been dry cleaned. The visitors had to wear surgical caps, masks and gowns over their regular clothing. She "went into a coma" when there was any "ecologic insult" to her. The "coma" was relieved by drops of neutralizing solution administered under her tongue. She was unable to do housework or shopping, and her husband performed most of the child care and housework. He was very solicitous and worried about his wife's health, stating: "She could die at any time."

Before age 30 she had consulted numerous doctors. A letter from her family physician reported that at age 30 she had 90 complaints in 15 organ systems, including respiratory, dermatologic, hematologic, endocrinologic, ear/nose/throat, neurologic, ophthalmologic, musculoskeletal, gastrointestinal, urinary tract, psychiatric, reproductive, dental and cardiovascular. None of the complaints had recognized organic causes. In 1 year she had consulted 19 specialists and several general practitioners as well as attending emergency departments. She had been treated with antidepressants on two occasions and had consulted a psychiatrist for marital and sexual problems and conflict over whether to return to work after the birth of her second child.

According to the patient her 75-year-old mother had been chronically ill from the age of 25, with symptoms similar to the patient's. Her father had been dead 10 years. He had died at age 58 of a myocardial infarction. An older sister was described as being sickly and was said to require a special diet for her nerves, and a younger brother was described as an alcoholic.

The patient reported having been sickly through most of her childhood. She had had frequent prolonged absences from school because of upper respiratory tract infections. She had also had numerous episodes of vomiting, abdominal pain and headache for which no medical cause could be found. After puberty she was frequently in bed with dysmenorrhea, and she underwent her first dilation and curettage at the age of 15. Subsequently she frequently attended doctors' offices and emergency rooms for minor medical complaints. She married in her early 20s, having completed 2 years of university, and became pregnant. Following the birth of her first child she had postpartum depression that lasted about 1 year; shortly thereafter she became pregnant again. This time the postpartum depression lasted 2 years, after which she had a tubal ligation. She had led a restricted social life, with few outside interests, and had frequent interpersonal conflicts.

She was an anxious, articulate, upper-middle-class woman who was dramatic and spoke in superlatives. Her sleep and appetite were fair, and she did not look depressed. She was angry toward doctors and the medical system, complaining about their inability to find the true cause of her illness. She frequently referred to her new support group of other patients with 20th-century disease, and she was preoccupied with her symptoms and the mystery surrounding their cause. There was no evidence of psychosis. She was correctly oriented; her judgement and insight regarding her symptoms was poor. Her problem was diagnosed as a somatization disorder.

She adamantly denied that there was a psychiatric cause for her symptoms. While discussing the possibility of psychiatric treatment and the advantages of leading a more unrestricted life she replied: "Why should I do that? I'm better than I've been for years! Discovering that I have 20th-century disease has made my life so much happier." The isolation imposed by 20th-century disease had solved many of her problems with her husband, as he no longer made sexual requests of her and now undertook most of the housekeeping and child care. She was relieved of any conflict about not working outside the home, and she exerted considerable control over her environment and the people who visited her.

Discussion

All 18 patients in this series were intelligent and well educated, and in general the psychiatric referrals had been made after exhaustive medical investigations that reinforced the patients' belief in an organic cause for their illness. It is important that 10 of the patients presented with well recognized psychiatric conditions (psychoses or affective or anxiety disorders) that can usually be treated effectively. Seven of the remaining eight patients presented with somatoform disorders (somatization, conversion and hypochondriasis), which are notoriously difficult to treat. From an early age these somatizing patients usually complain of multiple symptoms, and throughout adult life they

regard themselves as sickly. Somatizers repeatedly tend to experience psychologic states as bodily sensations, expressing psychic distress in somatic terms.[2,3]

Our patients, frustrated by having symptoms but no diagnosis, turned to clinical ecologists, who diagnosed 20th-century disease. These medical practitioners stress environment as a cause of illness; their practice is based on many theories, including the belief that in low doses various substances usually considered nontoxic to most of the population can interact with one another to produce illness in susceptible individuals.[4] These theories have not been accepted by conventional medicine,[4-7] as they are based on studies whose methods and validity are questionable. Treatment of 20th-century disease is unorthodox, as well as expensive.[7] Neutralizing solutions (dilutions of the antigens to which the patient has responded adversely) are given sublingually to alleviate or prevent reactions. Rotary diets provide the patient with steady, limited, nontoxic exposures to foods. The use of air ecologizers, ecologically safe havens and triply distilled water is meant to prevent exposure to other environmental toxins. Patients seriously afflicted with 20th-century disease are said to require hospitalization and treatment in the United States, where ecologically safe clinical units have been constructed. Meanwhile these patients and their supporters urge provincial health insurance authorities to finance treatment in American facilities or to construct similar units in Canada.

More severe than the symptoms can be the social isolation imposed upon the patient by ecologic treatment. Having to restrict his or her contact with substances found in everyday life, the patient often moves away from family and friends, becoming a modern hermit. An English patient described ecologic treatment as being condemned to a "living death from which there was no escape".[8] One of our patients attempted suicide after being advised by a clinical ecologist to restrict her life. Her comment: "I'd rather die than live like that."

Clearly we can draw only limited conclusions from the patients we have assessed. The group was small; most of the patients were reluctant to see a psychiatrist, and all but two refused psychologic testing, as they believed their symptoms were caused by allergies. Our patients may not have been representative in that their referral for psychiatric assessment may have stemmed from more severe manifestation of this condition or from more psychiatric symptoms. However, British and American physicians assessing patients with 20th-century disease have also diagnosed psychiatric disorders.[9-11] Clinical ecologists, on the other hand, maintain that psychologic symptoms are the effect of the allergies rather than the cause. Scientific evidence for this theory is lacking, and symptoms often antedate exposure to the substance supposedly precipitating the reaction. Some studies do suggest that food allergies cause psychologic symptoms, but their dubious methods cast serious doubt on their conclusions.[6,12-15] A recent study failed to find evidence that food allergy caused psychologic symptoms in 19 patients who presented at an allergy clinic with common neurotic symptoms that they attributed to allergy; hypersensitivity could not be confirmed, and the group was almost identical in psychiatric symptoms and general characteristics to a group of newly referred psychiatric outpatients.[16]

Throughout history there have been patients with multiple medical problems for which no conventional cause could be found. The Egyptians described unknown diseases and attributed them to displacement or wandering of the uterus. Hippocrates called this condition hysteria, after the Greek word for uterus. In 1859 Paul Briquet wrote a monograph on hysteria, concluding that the disorder was related to the brain rather than the genitals. Shortly thereafter Jean Charcot proposed that emotional trauma led to disease manifestations, and by means of hypnotic suggestion he eliminated hysterical symptoms. Further work by Pierre Janet, Joseph Breuer and Sigmund Freud led to an understanding of the psychodynamic mechanisms that underlie hysterical symptoms, along with at least a partial causal explanation of their formation and a rationale for their treatment.[17]

Since then patients with physical and mental symptoms with no discernible medical cause have received many different diagnoses. Neurasthenia, as described by Beard in 1880, consisted of complaints of mental and physical fatigue associated with a sensation of pressure in the head, poor memory, inability to concentrate, irritability of temper, increased reflexes, poor sleep patterns and other poorly defined symptoms not unlike those of 20th-century disease. Numerous theories about the cause were advanced, such as inherited traits, overwork, masturbation and autointoxication resulting from constipation, but no endogenous cause for neurasthenia was ever proven. Expensive treatments, often in spas, aimed at cleansing and resting the body and eliminating neurasthenic toxins were available to those who could afford them earlier this century.

Vasomotor neurosis, vasoregulatory asthenia, neurocirculatory asthenia, soldier's heart and Da Costa's syndrome have all been fashionable diagnoses for conditions similar to 20th-century disease.[18] More recently hypoglycemia, deficiencies of trace elements or vitamins, and generalized candidiasis have become popular.

All these conditions have several features in common. Their presentation is often complex and confusing, with numerous symptoms unexplainable by conventional medicine, and they are attributed to a variety of causes, including trauma, stress, faulty diet and abnormal metabolic or immune responses. Treatment has usually been difficult and, at least since the 1900s, often expensive and frequently unconventional.

Is 20th-century disease a new illness, an aller-

gic disease caused by reactions to a toxin-filled environment? Or is it another diagnosis for a group of syndromes that have confused and frustrated physicians for more than 3000 years?

Conclusions

Psychiatric disorders were found in all 18 patients with 20th-century disease referred to our psychiatric consultation service. This suggests that psychiatric diagnoses as well as medical ones should be considered when patients have multiple ill-defined symptoms in the presence of normal clinical and laboratory findings. If a psychiatric diagnosis is made, appropriate referral or treatment should be instituted early to avoid reinforcement of symptoms and disability. Effective treatment of patients with somatoform disorders requires recognition of psychologic conflict in the genesis of their symptoms, along with management by one physician (often the family doctor) who can assist them in connecting the physical symptoms with psychologic stress, thus protecting them from repeated and unfruitful investigations and quests for exotic explanations for the symptoms.

Twentieth-century disease appears to be not a new illness but, rather, a fashionable name for a condition known to physicians for centuries.

In recognizing the limitations of this study, we see a need for scientifically valid multidisciplinary studies that include psychiatrists and are conducted with adequate numbers of randomly selected patients who purportedly have 20th-century disease to determine the causes of the condition. Only when this is done can rational treatment be provided. Meanwhile it is important that patients with a wide range of diagnosable and treatable psychiatric conditions not receive a misdiagnosis of 20th-century disease and thereby embark on a prolonged, socially isolating, expensive and often harmful course of ecologic treatment that reinforces their invalidism.

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Meetings

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April

Apr. 27–29, 1986

Fundamental Problems in Breast Cancer
Banff Springs Hotel
Secretary, Breast Unit, Cross Cancer Institute, 11560 University Ave., Edmonton, Alta. T6G 1Z2

May

May 28–30, 1986

Suicide: Identifying, Understanding and Helping People at Risk
King's College, London
Dr. John D. Morgan, Principal, King's College, 266 Epworth Ave., London, Ont. N6A 2M3; (519) 433-3491

May 28–30, 1986

The S.M. Dinsdale International Conference in Rehabilitation: "Towards the 21st Century"
Royal Ottawa Regional Rehabilitation Centre
Ms. Carol Anne Clarke, Public Relations Officer, Royal Ottawa Hospital, 1145 Carling Ave., Ottawa, Ont. K1Z 7K4; (613) 722-6521

June

June 13–16, 1986

86th Annual Meeting of the Canadian Lung Association (including scientific meetings of the Canadian Nurses' Respiratory Society and the physiotherapy section of the Canadian Lung Association)
Westin Hotel, Ottawa
Mr. A. Les McDonald, Director, Health education and program services, Canadian Lung Association, 75 Albert St., Ste. 908, Ottawa, Ont. K1P 5E7; (613) 237-1208